CLAIMS

1. A method for erasing data recorded in a data storage device in which a data bit is written onto a surface by applying a first combination of energy and force to the surface via a tip to form a pit in the surface representative of the data bit by local deformation of the surface, the method comprising applying a second combination of energy and force via the tip to prerecorded deformations of the surface to be erased to substantially level the surface.

2. A method as claimed in claim 1, wherein the force applied in the first combination is greater than the force applied in the second combination.

3. A method as claimed in claim 2, wherein the energy applied in the first combination is greater than the energy applied in the second combination.

4. A method as claimed in claim 1 wherein the energy applied in the first and second combinations comprises heat.

5. A method as claimed in claim 1, comprising forming new pits overlapping deformations representative of prerecorded data to be erased to substantially level the surface.

6. A method as claimed in claim 5, wherein the forming of the new pits comprises offsetting the new pits relative to the deformations representative of the prerecorded data to be erased.

7. A method as claimed in claim 6, wherein the forming of the new pits comprises forming a line of new pits in which each pit overlaps the immediately preceding pit.

8. A data processing system comprising: a data storage surface; a tip in contact with the surface and moveable relative thereto; and a controller operable, in a write

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mode, to apply a first combination of energy and force to the surface via a tip to form a pit in the surface representative of the data bit by local deformation of the surface and, in an erase mode, to apply a second combination of energy and force via the tip to prerecorded deformations of the surface to be erased to substantially level the surface.

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9.   A system as claimed in claim 8, wherein the force applied in the first combination is greater than the force applied in the second combination.

10.   A system as claimed in claim 9, wherein the energy applied in the first
10   combination is greater than the energy applied in the second combination.

11.   A system as claimed in claim 8, wherein the energy applied in the first and second combinations comprises heat.

15   12.   A system as claimed in claim 8, wherein the controller is operable to control the tip to form new pits overlapping deformations representative of prerecorded data to be erased to substantially level the surface.

13.   A system as claimed in claim 12, wherein the controller is operable to control
20   offset the new pits relative to the deformations representative of the prerecorded data to be erased.

14.   A system as claimed in claim 13, wherein the controller to operable to control to the tip to form a line of new pits in which each pit overlaps the immediately preceding
25   pit.

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